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EXAMINER

DINH, DUC Q

ART UNIT PAPER NUMBER

2629

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/717,835	GROSSMEYER, MARK	
	Examiner	Art Unit	
	DUC Q. DINH	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 November 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>6/30/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This Office Action is responsive to the Application filed on November 19, 2003. Claims 1-30 are currently pending and being examined.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on June 30, 2004 being considered by the examiner.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 recites "the differentiating of the individual keys" in line 3

Claims 11, 12 recite the limitation "the electronic device" in line 3.

Claim 15 recites the limitation "wherein: means for moving image"

There are insufficient antecedents basis for these limitations in the claims.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an

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international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1, 10, 12, 14, 19 and 20 are rejected under 35 U.S.C. 102(e) as being anticipated by Levin et al. (U.S Patent No. 6,885,314).

In reference to claim 1, Levin discloses a keyboard (10 in Fig. 1) having keys (15) for receiving input comprising:

a plurality of keys (15) for receiving input from on side (13 facing away of the user side) of the keyboard;

a peripheral support (hand grips 11) for enabling keyboard support between the hands of a user to receive input at the keys (15) from the digits (fingers) of the user; and,

a transparent portion (area 14 is light transmissive area allowing user to see there through in order to observe fingers operating keys 15) of the keyboard enabling view from the top of the keyboard to the digits (fingers) of the user at the bottom of the keyboard during the input (see Fig. 1, col. 3, lines 11-32).

In reference to claim 10, Levin discloses an electronic device (computer in Fig. 3) is attached to the keyboard 10 (col. 4, lines 66-67; col. 5, lines 1-3).

In reference to claim 12, Levin discloses the keyboard includes indentations at the sides thereof for receiving support for the keyboard from the hands of a use (handgrips 11 having a three-dimensional curvilinear shape which can be easily and comfortably gripped by both hands in a palms facing-thumb proximal-fingers distal position; col. 5, lines 8-12).

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In reference to claim 14, Levin discloses the keyboard has connections for connections to an electronic device, the connections chosen from the group consisting of direct electrical connections, infrared, and Blue tooth (col. 6, lines 5-30).

In reference to claim 19, Levin discloses process for input through a keyboard comprising the steps of:

providing a keyboard (10) having a plurality of keys for receiving input from on side (13) of a keyboard;

providing a peripheral support (hand grips 11) to enable keyboard support between the hands of a user to receive input at the keys from the digits (fingers) of the user;

supporting the keyboard (10) between the hands of a user with the digits (fingers) extending to an underside of the keyboard (See Fig. 1, fingers of user extending underside 13 of the keyboard 10); and,

providing a transparent keyboard (area 14 of keyboard 10 is transparent, i.e. area 14 is light transmissive area allowing user to see there through in order to observe fingers operating keys 15). to enabling view of the keyboard during the input from either side of the keyboard; and,

inputting data to the keyboard with the digits of the user and viewing the digits of the user at the transparent keyboard (area 14 is light transmissive area allowing user to see there through in order to observe fingers operating keys 15; col. 3, lines 11-32).

In reference to claim 20, Levin discloses inputting data to the front of the keyboard (keys may be distributed with more keys on the surface which faces the user so that the user can input data in the data in front of the keyboard; col. 5, lines 35-38).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2, 22 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Levin in view of Takeshi (JPO 10-321121).

In reference to claim 2, Levin does not disclose the peripheral support (hand grips 11) between the hands of a user for enabling keyboard support between the hands of a user to receive input at the keys from the digit of the user includes peripheral sensors for detecting the hands supporting the keyboard; and a circuit interconnected between the sensors and the keyboard for activating the keys on the rear side of the keyboard. Takeshi discloses a handheld computing device provided with a sensors (5a-5b; Fig. 2) for detecting the hands for activating different keys functions of the keyboard of the handheld device (paragraph 0010)

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the sensor to detect of a user's hand in the device of Liebenow as taught by Takeshi because it would prevent data unintentional actuation of input keys from the keyboard or control

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buttons during the entry of other data when the display device of the system is used an touch sensitive panel input.

In reference to claim 22, Levin disclose step of providing a plurality of keys includes: providing peripheral support (hand grips 11) about the plurality of keys for receiving input from either side of the keyboard; placing palm sensors at the peripheral support;

Levin does not disclose activating the keyboard upon the sensors being contacted at the sides of the keyboard. Takeshi discloses a handheld computing device provided with a sensors (5a-5b; Fig. 2) for detecting the hands for activating different keys functions of the keyboard of the handheld device (paragraph 0010)

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the sensor to detect of a user's hands in the device of Levin as taught by Takeshi because it would prevent data unintentional actuation of input keys from the keyboard or control buttons during the entry of other data when the display device of the system is used an touch sensitive panel input.

In reference to claim 23, Levin does not discloses detecting the support of the keyboard between the hands of the user; and, enabling the plurality of keys for receiving input from back side of the keyboard to receive input from the underside of the keyboard when support of the keyboard between the hands of the user is detected.

Takeshi discloses a handheld computing device provided with a sensors (5a-5b; Fig. 2) for detecting the hands for activating different keyboard functions of the handheld device (paragraph 0010)

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the sensor to detect of a user's hand in the device of Liebenow as taught by Takeshi because it would prevent data unintentional actuation of input keys from the keyboard or control buttons during the entry of other data when the display device of the system is used an touch sensitive panel input.

8. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Levin in view of Jam (U.S Patent No 6,727,829).

In reference to claim 3, Levin discloses keys (15) of the keyboard maybe distributed with more keys deployed upon operating surface (13) and upon surface of keyboard faces the user (col. 5, lines 35-39) and the keys of the keyboard including touch sensitive pad, i.e. the front keyboard faces the user is provided with digital input from touch sensitive pad; (col. 4, lines 28-33).

Levin does not disclose a key for activating the front side the keyboard only whereby digital input of the keyboard is restricted to the keyboard at the front side when the key for activating is depressed. Jam disclose a keyboard with integrated pointer control function having switching button (105, 105'; Fig. 1) to switch the keyboard between standard keyboard mode or pointing mode, i.e. digital input mode (the keyboard switching keyboard mode and pointing mode when the activating key is depressed).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide the switch button to switching between modes in the device of Levin because it would prevent unintended output commands between operation modes of the keyboard device.

9. Claims 4-5, 7, 11, 13, 14, 21, 24-25, and 27-29 are rejected under 35 U.S.C. 102(e) as being anticipated by Liebenow et al (U.S Patent No. 6,909,424), hereinafter Liebenow.

In reference to claim 4, Liebenow discloses a keyboard (backside keyboard for appliance input device as shown in Fig. 15) having keys (704) for receiving input comprising:

a plurality of keys (704) for receiving input from one side of the keyboard;

a peripheral support (left and right support of the device) for enabling keyboard support between the hands of a user to receive input at the keys (704) from the digits (fingers) of the user (support 108 and 110 of Fig. 1, see col. 4, lines 11-15; the fingers of hands is show in Fig. 15);

an electronic device (appliance input device 700) communicating with the keyboard;

a display (708) interactive with the electronic device including input from the keyboard;

an application program (word processor in Fig. 15, calculator in Fig, 16) accepting input from the keyboard and having output to the display to indicate function of the application program (see Fig. 15-16 and col. 15, lines 35-45);

an image of the keyboard (indicia 702,704 of keyboard) superimposed upon the application program including individual keys on the display side of the keyboard (indicia are displayed on display of the device for indicating the positions of keys of the input device; see col. 13, lines 45-50).

In reference to claim 5, Liebenow discloses an interface for varying the transparency of the image of the keyboard relative to the application program (attributes 714 such as the

brightness or color of the key representation 704 may be altered, i.e. varying the transparency, thereby highlighting the key representation 704 to the user (col. 14, lines 12-15).

In reference to claim 7, Liebenow discloses the differentiating of the individual key includes differentiating of the key to indicate data input (a symbol 172 (FIG. 1) such as a box, a circle, shadowing, an "X", a checkmark, etc., may be displayed over the key representation 704 to indicate its actuation; col. 14, lines 23-25).

In reference to claim 11, Liebenow disclose an electronic device is integral with the keyboard (digital information input device 700 is integral to the keyboard as shown in Fig. 15).

In reference to claim 13, Liebenow discloses the keyboard includes indentations at the sides thereof for receiving support for the keyboard from the hands of a user (the user may grasp the housing 102 so the left and right side surfaces 108 & 110 fit within the palms of the user's left and right hands 122 & 124, respectively. In this manner, the fingers of the user's left and right hands 122 & 124 are positioned over the back surface 106 of the housing 102 while the thumbs are positioned over the front surface 104 along the left and right side surfaces 108 & 110 as shown in FIG. 1, or alternately, positioned along side surfaces 108 & 110; col. 4, lines 14-24).

In reference to claim 21, Levin discloses providing a plurality of transparent keys (see claim 1) and Liebenow disclose a keyboard in Fig. 2 that standard keys 134 having imprinting indicia of characters and numbers on the transparent keys for enable identification of the input of

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the keys from backside of the keyboard Fig. 2, col. 4, lines 33-38 of Liebenow ; and indicia 702 comprised of representation 704 in Fig. 15-16; col. 45-55).

It would have been obvious for one of ordinary skill in the art at the time of the invention to recognize imprinting indicia on keys of Liebenow would increase the visibility for identifying the transparent keys on the other side the keyboard.

In reference to claim 24, Liebenow discloses a process for input through a keyboard comprising the steps of:

providing a plurality of keys (704) for receiving input from either side of a keyboard (Fig. 15);

providing a peripheral support to enable keyboard support between the hands of a user to receive input at the keys from the digits of the user (supports 108 110, see col. 4, lines 11-15; the fingers of hands is show in Fig. 15);

supporting the keyboard between the hands of a user with the digits extending to an underside of the keyboard (see Fig. 1, surface 108, 110 for supporting the keyboard between hands)

providing an image of the keyboard (Keys 704 of the backside keyboard; Fig. 15, 16) on the display (706) having a view from the top of the keyboard during the input (user can see the view of the keyboard during input application program in Fig. 15 and 16), and,

inputting data to the keyboard with the digits of the user while holding the keyboard and viewing the display (word processor input or calculator input Figs. 15 and 16 see col. 13, lines 45-55).

In reference to claim 25, Liebenow discloses steps of providing an image of the keyboard includes providing indicia (704) indicating input of data at a key (col. 13, lines 45-55, Figs. 15-16).

In reference to claim 27, Liebenow discloses the steps of: providing an electronic device (appliance input device 700 in Fig. 5) having a display (706) that receives input from the keyboard (using word processor in Fig. 15) and has output indicating the function of an application program running in the electronic device (word processor program); and, superimposing an image of the keyboard overlying the output indicating the function of the application program (keyboard with keys 702, 704 and 714 overlying the word processor program; see col. 45-55; Fig. 15-6).

In reference to claim 28, Liebenow discloses the step of providing a display (706) on an electronic device (Fig. 15 shows display 706 of the appliance input device 700).

In reference to claim 29, Liebenow discloses the display device (706) is integral to the keyboard as claimed (Figs. 15-16).

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10. Claims 6, 8-9 and 26-27 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liebenow in view of Murai et al (U.S Patent No. 5,635,958) hereinafter Murai.

In reference to claim 6, Liebenow discloses the image of the keyboard superimposed upon the application program includes differentiating the image of individual key from the remaining keys (FIGS. 15 and 16, the display attributes 714 of key representations 704 corresponding to keys which may be depressed of a finger to a key, by the user may be changed thereby indicating to the user which keys may be pressed; col. 14, lines 12-15). Liebenow does not discloses differentiating the image of individual keys from the remaining keys to indicate proximity of a digit to a key.

Murai disclose differentiating the image of individual keys from the remaining keys to indicate proximity of a digit to a key (as shown in FIG. 18A, the finger positions in proximity to each key top are indicated as a bitmap combination of small spots, and the thumb position is indicated by a horizontal mark. With the approach of a finger to the proximity sensor 22, sets of characters corresponding to the keytops are displayed distinctly on the screen as shown in FIG. 18B; see Fig. 17-18 and col. 7, lines 49-60).

It would have been obvious for one of ordinary skill in the art at the time of the invention to learn the teaching of Murai, i.e.: providing feedback of to user when the finger digit of the user proximate individual keys from the rest of keys in the device of Liebenow because it would an apparatus for making comfortable information entry in all situations by offering a user key information or key position information in advance of a key operation of the user thereby to

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assist the user in performing a blind touch operation and to reduce an opportunity of making an erroneous key operation, or to make the user's one-hand operation possible (col. 1, lines 51-56).

In reference to claim 8, Murai discloses the differentiating of the individual key includes differentiating of the key to indicate digital proximity to the key. (a finger in proximity to a key as shown in Fig. 14, the brightness of a specific icon changes; col. 7, lines 20-25).

In reference to claim 9, Murai discloses means for superimposing on the image of the keyboard indicia indicating proximity of a digit to the key includes a sensor located proximate the key (proximity sensor 22 in Fig. 17).

In reference to claim 26, Murai discloses the step of: providing an image of the keyboard includes providing indicia indicating the proximity of a digit at a key (a finger in proximity to a key as shown in Fig. 14, the brightness of a specific icon changes; col. 7, lines 20-25).

In reference to claim 30, Murai discloses the step of providing a first display at the keyboard having a view from the top of the keyboard to indicate the proximity of the digits of the user to the keys (see the rejection as applied to claim 6); and,

providing a second display at the keyboard having a view from the top of the keyboard to indicate the contact at the digits of the user to the keys for input (a symbol 172 (FIG. 1) such as a box, a circle, shadowing, an "X", a checkmark, etc., may be displayed over the key representation 704 to indicate its actuation; col. 14, lines 22-25).

11. Claim 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Liebenow in view of Carroll et al. (U.S Patent No. 6,121,960), hereinafter Carroll.

In reference to claim 15, Liebenow does not disclose means for moving image of the keyboard relative to the display indicating of the application program. Carroll discloses a touch screen system with image of the keyboard superimposed upon application program (Fig. 5; col. 3, lines 10-15) that can move the image of the keyboard on the display screen indicating of the application program (see the move icons in Fig. 2 and 4; col. 11, lines 56-65).

It would have been obvious for one of ordinary skill in the art at the time of the invention to provide method for moving image of the keyboard on the display screen of Liebenow because it would provide a system that control the keyboard image and the application on the display independently when needed (, i.e. relocated the keyboard on the lower side display screen when upper side of the display screen is needed for displaying highlight information).

12. Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Levin in view of Robinson et al. (U.S Patent No. 5,941,648), hereinafter, Robinson.

In reference to claim 16, Levin does not disclose the keyboard includes a first keyboard half and a second keyboard half and a central hinge enabling the first keyboard half to fold overlying the second keyboard half, Robinson discloses a foldable keyboard includes a first

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keyboard half and a second keyboard half and a central hinge enabling the first keyboard half to fold overlying the second keyboard half (see Fig. 6-7 and col.2, lines 10-30).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the keyboard of Levin to include a first keyboard half and a second keyboard half and a central hinge enabling the first keyboard half to fold overlying the second keyboard half as taught by Robinson because it would improve the mobility and portability of the keyboard for the system (see col. 1, line 64 – col. 2, line 6 of Robinson).

13. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Liebenow and in view of Robinson et al. (U.S Patent No. 5,941,648), hereinafter, Robinson.

In reference to claim 17, Liebenow does not disclose the keyboard includes a first keyboard half and a second keyboard half and a central hinge enabling the first keyboard half to fold overlying the second keyboard half, Robinson discloses a foldable keyboard includes a first keyboard half and a second keyboard half and a central hinge enabling the first keyboard half to fold overlying the second keyboard half (see Fig. 6-7 and col.2, lines 10-30).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the keyboard of Liebenow to include a first keyboard half and a second keyboard half and a central hinge enabling the first keyboard half to fold overlying the second keyboard half as taught by Robinson because it would improve the mobility and portability of the keyboard for the system (see col. 1, line 64 – col. 2, line 6 of Robinson).

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14. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Levin in view of Brandenburg et al. (U.S Patent No. 6,665,173), hereinafter Brandenburg

In reference to claim 18, Levin does not disclose the keyboard includes a first keyboard half and a second keyboard half; and a central support and display area for electronic appliances is placed between the first keyboard half and the second keyboard half.

Brandenberg discloses handheld device includes a keyboard having a first keyboard half and a second keyboard half and a central support and display area for electronic appliances is placed between the first keyboard half and the second keyboard half (see Fig. 7d).

It would have been obvious for one of ordinary skill in the art at the time of the invention to modify the keyboard to a first keyboard half and a second keyboard half; and a central support and display area for electronic appliances is placed between the first keyboard half and the second keyboard half in the device of Levin as taught by Brandenburg because it would provide a compact and portable keyboard for the handheld device.

Conclusion

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DUC Q DINH whose telephone number is (571) 272-7686. The examiner can normally be reached on Mon-Fri from 8:00.AM-4:00.PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Hjerpe can be reached on (571) 272-7691. The fax phone number for the organization where this application or proceeding is assigned is **571-273-8300**.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

DUC Q DINH
Examiner
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A handwritten signature in black ink, appearing to read 'Duc Q Dinh', with a stylized, cursive script.

DQD
June 24, 2006